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Research Reports

Making up History: False Memories of Fake News Stories

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Abstract

Previous research has shown that information that is repeated is more likely to be rated as true than information that has not been heard before. The current experiment examines whether familiarity with false news stories would increase rates of truthfulness and plausibility for these events. Further, the experiment tested whether false stories that were familiar would result in the creation of a false memory of having heard the story outside of the experiment. Participants were exposed to false news stories, each portrayed by the investigator as true news stories. After a five week delay, participants who had read the false experimental stories rated them as more truthful and more plausible than participants who had not been exposed to the stories. In addition, there was evidence of the creation of false memories for the source of the news story. Participants who had previously read about the stories were more likely to believe that they had heard the false stories from a source outside the experiment. These results suggest that repeating false claims will not only increase their believability but may also result in source monitoring errors.

Keywords: illusory truth, source, false memory, familiarity

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The main purpose of this study was to determine whether repeated exposure to fictitious stimuli would cause participants to develop a false memory for having heard about the false news stories from a source outside of the experiment. In addition, the current study attempted to replicate the finding that exposure to false information changes the perceived truthfulness and plausibility of that information. Many studies have demonstrated that repeating statements of uncertain truth tends to shift their truth-value ratings toward the true end of the scale. The “illusory-truth effect” was first observed by Hasher, Goldstein, and Toppino (1977), who found that subjects rated repeated statements as more true than new statements. In Arkes, Hackett, and Boehm (1989), participants were exposed to a 108-statement list in the first week and a second list of the same length one week later. This second list was comprised of some of the statements seen earlier plus some statements seen for the first time. Results suggest that repeated statements were rated as more valid than non-repeated statements. The authors concluded that familiarity was a basis for the judged validity of statements. According to Begg, Anas, and Farinacci (1992), a statement will seem true if it expresses information that feels familiar. Increased familiarity is an automatic consequence of exposure and its influence on rated truth is unintentional. Even when subjects were warned that the source may not be credible, it did not seem to influence the rated truth. In Bacon (1979) subjects were explicitly told at study and at test that half of the statements they were exposed to in the experiment were true and half

were false, so they knew that statements they had previously heard were no more likely to be true than new ones. Even with this explicit information available, repeated statements were rated as more true than new statements.

Jacoby, Kelley, Brown, and Jasechko (1989) examined the *false-fame effect*, which occurs if repeated non-famous names are called *famous* more often than new non-famous names. They proposed that old names are called famous because they feel familiar. The problem is that the familiarity reflects prior exposure in the experiment and this familiarity gives no objective basis for fame. Jacoby et al. told the subjects that all of the old names were actually non-famous. In this case, recollection of the source of an old name would lead to it being called *non-famous*, even though the feelings of familiarity alone would lead to it being called *famous*. This information eliminated the false-fame effect on immediate, but not delayed (24-hour) tests. This “sleeper effect” shows source memory and familiarity are affected differently by the passage of time.

Source monitoring refers to one’s ability to correctly identify the origins of specific information or memories and make correct attributions to that source (Johnson, Hashtroudi, & Lindsay, 1993). Several studies suggest that participants use familiarity to develop a source for their memory. Marsh, Meade, and Roediger (2003) investigated how people learn and integrate information from fictional sources with their general world knowledge. Participants read true and false “facts” and then after a short delay, took a general knowledge test. Subjects used both the true and false information from the stories to answer general knowledge questions. In addition, subjects were aware of using story information, but interestingly, story exposure also increased belief that the facts had been known prior to the experiment, even for misinformation answers that were rarely produced without story reading. Fragle and Heath (2004) also demonstrated that familiarity can affect memory for source. Their studies showed that participants who read repeated statements were more likely to believe them; in addition, those statements that were more believable (due to exposure) were believed to come from a more credible source, for example from the reputable Consumer Reports instead of a tabloid magazine such as the National Enquirer. Potts, St. John, and Kirson (1989) suggest that memory for facts becomes incorporated into semantic memory and that general knowledge does not focus on specific conditions of encoding that would help a person decide when and where this information was learned. A person may have knowledge about an event (such as one’s birth), but not remember the event. According to Frost (2000), remembering refers to memories that are associated with an encoding episode and for which a person has explicit memories for the event. Knowing, however, refers to memories that are not associated with an encoding episode and are not explicitly remembered. For the purpose of this experiment, the distinction is an important one. Participants in the current experiment who were exposed to the stories should have knowledge of the fictitious stories, but the important question was whether they remembered or developed an explicit memory of how they found out about this information. The current experiment examines whether the “illusory truth effect” will extend to false news stories and attempts to integrate the source monitoring literature with the illusory truth literature. The goal of the current study is to determine the effect of exposure on story believability and the effect of that exposure on memory for source.

Method

Participants

Participants were 44 undergraduate psychology students who participated in exchange for course credit. Six participants did not return for session two resulting in 21 participants in Group 1 and 17 participants in Group 2 (see Materials and Procedure section for an explanation of the groups).

Design

The experiment was a two factor mixed design. The between subjects independent variable was whether the participants were exposed to false target stories during the experiment. The within subjects repeated measures variable was the topic of the false news stories.

Materials and Procedure

Participants read excerpts from supposed news stories and were asked to indicate the likely publication source of each story (newspaper, magazine, journal/periodical, textbook, or tabloid), create a headline for each story, and estimate the date of publication. Each participant received five true stories from a variety of media sources, many of which covered well-known global and national events (see Appendix A for sample story); the five true stories were the same for all participants. In addition, all participants were exposed to five false stories; but only half of the participants were exposed to the five critical false stories and the other half were not (see Appendix A for a sample story). The goal of the experiment was to determine the influence of exposure to false information on memory for that information. Ratings from the control participants would serve as the baseline responses to which participants exposed to the stories would be compared. One false story (about a newly discovered mammal) was excluded from analyses due to an average rating of “definitely true” from participants who were not exposed to this story during the experiment, suggesting it is likely that they actually heard about a similar story from an outside source. Therefore, five critical false stories were used in the final analysis. Participants returned five weeks later and answered questions about the stories presented to the experimental group on day one, in addition to new true and false filler stories. Participants rated the perceived plausibility and truth of each story and their level of knowledge of the story on an eight point Likert scale (1 is not at all plausible/true/knowledgeable and 8 is very plausible/true/knowledgeable). Participants also rated on a scale of one to eight (1 is not sure at all and 8 is very sure) their confidence in their memory for hearing about the story from a source outside of the experiment such as on the news, hearing people talk about, or reading about it in a publication.

Results

The ratings given on Day 2 by participants who had read about the false news stories on Day 1 were compared to the ratings given to the same false news story by participants who were not exposed to the story on Day 1. The results of the mixed ANOVA showed no significant main effect of stories on plausibility for the news events ($F(4, 144) = .968, p = .43, \eta^2 = .03$), indicating that the particular stories the participants read did not significantly influence their pattern of responses. There was a significant main effect of exposure, indicating that the plausibility ratings from the participants who had read about the false news event in the experiment ($M = 5.43, SD = 1.12$) were higher than the ratings from the participants who had not previously read about the events ($M = 4.129, SD = 1.30; F(1, 35) = 100.44, p < .01, \eta^2 = .74$; see Figure 1).

There was no significant interaction effect between the stories and prior exposure ($F(4, 144) = 2.25, p = .07, \eta^2 = .06$). Results show that there was a significant effect for story on rated truth, indicating that some stories were rated as more true than other stories ($F(4, 144) = 4.62, p < .01, \eta^2 = .11$). There was not a significant interaction ($F(4, 144) = 1.14, p = .34, \eta^2 = .03$) between exposure and story which suggests that although the particular stories varied in perceived truthfulness, the effect was consistent between exposure levels. There was a significant main effect for previous exposure ($F(1, 36) = 9.79, p < .01, \eta^2 = .21$) in that participants who read about the stories in the experiment were more likely to rate the stories as true ($M = 5.15, SD = 1.16$) than participants who were not previously exposed to the stories ($M = 3.93, SD = 1.25$; see Figure 1). Results show that there was no significant

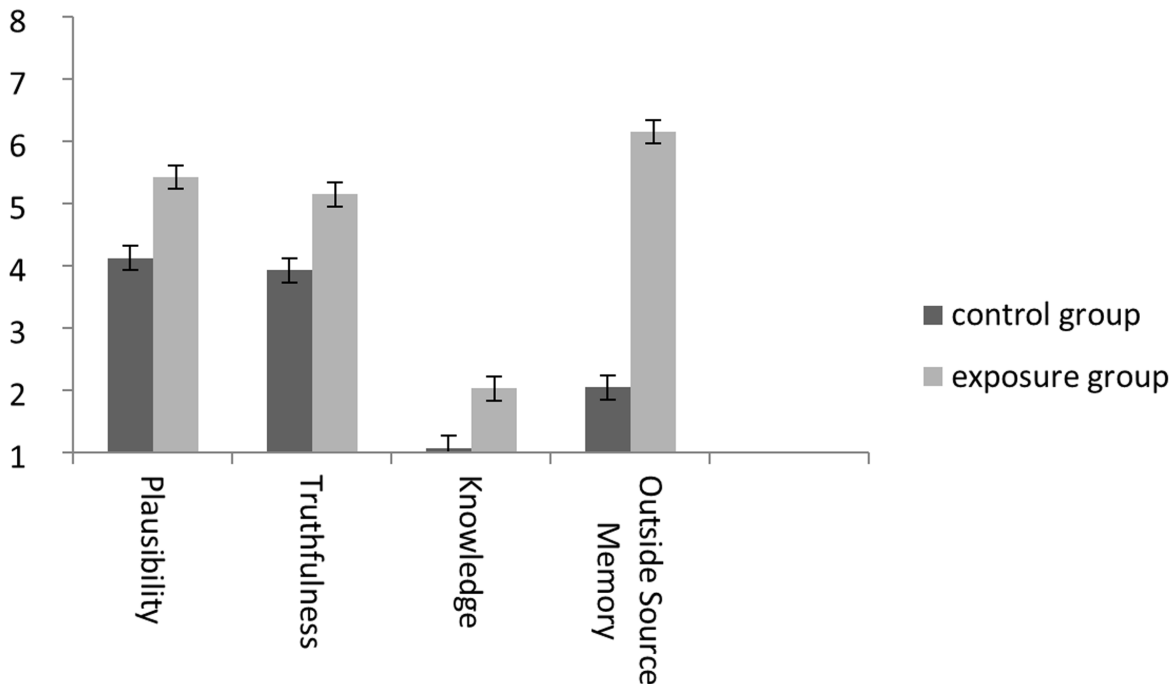


Figure 1.

Average false story ratings of plausibility, knowledge, truthfulness, and memory for outside source given by the control and previous exposure groups. Likert scale ratings range from 1 (*none*) to 8 (*very*).

effect of story type on knowledge of the events ($F(4, 132) = .73, p = .58, \eta^2 = .02$) or interaction between story and exposure ($F(4, 132) = .46, p = .76, \eta^2 = .01$). As expected, there was a main effect for previous exposure on knowledge ($F(1, 33) = 20.71, p < .01, \eta^2 = .39$); participants who had not been exposed to the stories during the experiment reported having no knowledge of the stories ($M = 1.08, SD = .18$), whereas participants who had read about the false stories in the experiment reported knowing slightly more about those events ($M = 2.03, SD = .79$; see Figure 1). Participants who were exposed to the false news stories in the experiment were also significantly more likely to have a strong memory of hearing about the stories from a source outside of the experiment ($M = 6.16, SD = 1.45$) than were participants who were not previously exposed to the stories ($M = 2.05, SD = .94$); $F(1, 35) = 100.44, p < .01, \eta^2 = .74$; see Figure 1). There was no main effect of story ($F(4, 140) = .97, p = .43, \eta^2 = .03$) or story by exposure interaction ($F(4, 140) = 2.25, p = .07, \eta^2 = .06$).

Discussion

Results from the current study show that exposure to false stories increased the perceived plausibility and truthfulness of those stories. This suggests that simply exposing participants to false information will increase belief in the false information. These results add to the vast literature demonstrating “illusory-truth effects” (Hasher et al., 1977), in which repeated statements are viewed as more true than new statements, and also demonstrates that the effect extends to longer narratives. The results also suggest that although participants may have been aware that they were exposed to the story during the course of the experiment, they also believed that they had heard or read about the story from somewhere else, which is evidence of source misattribution. Therefore, this experiment demonstrated that repetition of false information can result in increased belief in the false information,

in addition to source errors, which occur when participants mistakenly attribute a memory to an incorrect source (Johnson et al., 1993). It is important to note that the control group and the exposed group rated the same false stories; the only difference between the control and experimental groups was whether they had heard about the false stories during the experiment. It seems possible then that familiarity may lead to a source monitoring errors and lead participants to believe that they had heard of these news stories outside of the context of the experiment. According to Johnson et al., if effort is made to actively integrate information, which participants likely did while trying to create headlines for the stories, then the participants are more likely to exhibit confusion over fictional versus factual information. The effect is even more pronounced at long time delays, and in the current experiment, the 5 week time delay was significant. These results suggest that repeating false claims will not only increase their believability but may also result in the false belief that they had been heard about previously and from more than one source. Fragale and Heath (2004) also suggest that the more familiar the information seems, the more credible the source from which it is assumed to have originated is perceived. These findings have many real world applications. During elections, opposing parties often engage in slander campaigns in which false information about a candidate is repeated. These results suggest that as the public becomes more familiar with the false information, they may come to believe it; in addition, according to Fragale and Heath's research, people may end up believing that they heard about the false information from a highly credible source which may increase the rate of transmission and subsequent belief in the information by others. False advertising often involves unfounded claims about products which may boost sales if participants believe they heard the claim from a less biased source, such as a friend or neutral third party. Finally, one can imagine how the introduction of evidence that is later stricken from the record could be confused with admissible evidence, resulting in injustice in the courtroom. Future research should manipulate the retention interval between exposure and source test and determine the duration of the effect. In addition, the effect of repeating the false information should be examined to determine whether the believability ratings will continue to increase as the number of exposures increases. Finally, it is important to assess the impact of a variety of sources on belief to determine whether the credibility of the source plays a role in rated truth. This research study is a first step in understanding how repeated false information can not only come to be believed, but also be misremembered as originating from an incorrect source.

References

- Arkes, H. R., Hackett, C., & Boehm, L. (1989). The generality of the relation between familiarity and judged validity. *Journal of Behavioral Decision Making*, 2, 81-94. doi:10.1002/bdm.3960020203
- Bacon, F. T. (1979). Credibility of repeated statements: Memory for trivia. *Journal of Experimental Psychology. Human Learning and Memory*, 5, 241-252. doi:10.1037/0278-7393.5.3.241
- Begg, I. M., Anas, A., & Farinacci, S. (1992). Dissociation of processes in belief: Source recollection, statement familiarity, and the illusion of truth. *Journal of Experimental Psychology. General*, 121, 446-458. doi:10.1037/0096-3445.121.4.446
- Fragale, A. R., & Heath, C. (2004). Evolving informational credentials: The (Mis)attribution of believable facts to credible sources. *Personality and Social Psychology Bulletin*, 30, 225-236. doi:10.1177/0146167203259933
- Frost, P. (2000). The quality of false memory over time: Is memory for misinformation "remembered" or "known"? *Psychonomic Bulletin & Review*, 7, 531-536. doi:10.3758/BF03214367
- Hasher, L., Goldstein, D., & Toppino, T. (1977). Frequency and the conference of referential validity. *Journal of Verbal Learning and Verbal Behavior*, 16, 107-112. doi:10.1016/S0022-5371(77)80012-1

Jacoby, L. L., Kelley, C. M., Brown, J., & Jasechko, J. (1989). Becoming famous overnight: Limits on the ability to avoid unconscious influences of the past. *Journal of Personality and Social Psychology*, *56*, 326-338.

doi:10.1037/0022-3514.56.3.326

Johnson, M. K., Hashtroudi, S., & Lindsay, D. S. (1993). Source monitoring. *Psychological Bulletin*, *114*, 3-28.

doi:10.1037/0033-2909.114.1.3

Marsh, E. J., Meade, M. L., & Roediger, H. L., III. (2003). Learning facts from fiction. *Journal of Memory and Language*, *49*, 519-536. doi:10.1016/S0749-596X(03)00092-5

Potts, G. R., St. John, M. F., & Kirson, D. (1989). Incorporating new information into existing world knowledge. *Cognitive Psychology*, *21*, 303-333. doi:10.1016/0010-0285(89)90011-X

Appendix

Sample True Story

A survey of 1,900 heart attack survivors found that those who reported drinking the most tea were least likely to die by the follow-up study. The team suspects that antioxidants known as flavonoids, which are abundant in green and black teas, may explain the link between tea consumption and survival.

Sample False Story

The California State Legislature is expected to pass a law limiting the number of credit cards a person 'seriously indebted' may obtain. The system would work by placing a 'red flag' on the credit history of anyone who has \$5,000 or more of debt per monthly income. Removal of the flag would require a verified meeting with both a credit counselor and a representative from the credit company.

About the Author

Dr. Danielle C. Polage is currently an assistant professor at Central Washington University. Her research interests are memory, lying, and psychology and the law.